

AMENDMENTS TO THE CLAIMS

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1 1. (Currently Amended) A method of automatically applying a quality of service
2 treatment to a bidirectional network data flow, comprising the steps of:
3 receiving a bidirectional network data flow comprising at least one outbound
4 message element that is associated with an outbound quality of service
5 treatment value;
6 creating and storing an inbound quality of service value in association with
7 information identifying the bidirectional network data flow;
8 receiving one or more inbound message elements;
9 determining that the inbound message elements are associated with the same
10 bidirectional network data flow; and
11 applying the inbound quality of service value to the inbound message elements
12 based on the stored information.

1 2. (Currently Amended) A method as recited in Claim 1, wherein receiving a
2 bidirectional network data flow comprises receiving a bidirectional network data
3 flow comprising at least one outbound message element that is marked with a
4 DSCP value and wherein applying the inbound quality of service value comprises
5 marking the inbound message elements with the DSCP value.

1 3. (Currently Amended) A method as recited in Claim 1, wherein receiving a
2 bidirectional network data flow comprises receiving a bidirectional network data
3 flow comprising one or more outbound message elements that are marked with a
4 DSCP value, and wherein applying the inbound quality of service value comprises
5 retrieving the inbound quality of service value from a mapping of DSCP values to
6 associated quality of service values, and adding the retrieved quality of service
7 value to the inbound message elements.

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1 4. (Currently Amended) A method as recited in Claim 1, wherein the creating and
2 storing step comprises creating and storing a hash entry in a hash table that
3 uniquely identifies the bidirectional network data flow and that includes the
4 inbound quality of service value.

1 5. (Original) A method as recited in Claim 1, wherein applying the inbound quality of
2 service value to the inbound message elements based on the stored information
3 comprises automatically generating an inbound RSVP PATH message for the
4 flow when the inbound message elements include an RSVP PATH message.

1 6. (Currently Amended) A method as recited in Claim 1, wherein receiving a
2 bidirectional network data flow comprises receiving a bidirectional network data
3 flow comprising at least one outbound message element that includes an RSVP
4 PATH message and wherein applying the inbound quality of service value
5 comprises marking the inbound message elements with an RSVP PATH message.

1 7. (Currently Amended) A router apparatus capable of routing packets of data flows
2 in a packet-switched communications network and automatically applying quality
3 of service treatments to the data flows, comprising:
4 a memory configured to store information identifying the data flows and an
5 inbound quality service value associated with each of the data flows;
6 a stored program that can access the information in the memory and which, when
7 executed by the router apparatus, carries out the steps of:
8 receiving a bidirectional network data flow comprising at least one
9 outbound message element that is associated with an outbound
10 quality of service treatment value;
11 creating and storing an inbound quality of service value in association
12 with information identifying the bidirectional network data flow;
13 receiving one or more inbound message elements;

14 determining that the inbound message elements are associated with the
15 same bidirectional network data flow; and
16 applying the inbound quality of service value to the inbound message
17 elements based on the stored information.

1 8. (Currently Amended) A router apparatus as recited in Claim 7, wherein the stored
2 program step of receiving a bidirectional network data flow comprises receiving a
3 bidirectional network data flow comprising at least one outbound message
4 element that is marked with a DSCP value and wherein applying the inbound
5 quality of service value comprises marking the inbound message elements with
6 the DSCP value.

1 9. (Currently Amended) A router apparatus as recited in Claim 7, wherein the stored
2 program step of receiving a bidirectional network data flow comprises receiving a
3 bidirectional network data flow comprising one or more outbound message
4 elements that are marked with a DSCP value, and wherein applying the inbound
5 quality of service value comprises retrieving the inbound quality of service value
6 from a mapping of DSCP values to associated quality of service values, and
7 adding the retrieved quality of service value to the inbound message elements.

1 10. (Currently Amended) A router apparatus as recited in Claim 7, wherein the
2 creating and storing step comprises creating and storing a hash entry in a hash
3 table that uniquely identifies the bidirectional network data flow and that includes
4 the inbound quality of service value.

1 11. (Currently Amended) A router apparatus as recited in Claim 7, wherein receiving
2 a bidirectional network data flow comprises receiving a bidirectional network data
3 flow comprising at least one outbound message element that includes an RSVP
4 PATH message and wherein applying the inbound quality of service value
5 comprises marking the inbound message elements with an RSVP PATH message.

1 12. (Currently Amended) A switch apparatus capable of switching packets of data
2 flows in a packet-switched communications network and automatically applying
3 quality of service treatments to the data flows, comprising:
4 a memory configured to store information identifying the data flows and an
5 inbound quality service value associated with each of the data flows;
6 a stored program that can access the information in the memory and which, when
7 executed by the switch apparatus, carries out the steps of:
8 receiving a bidirectional network data flow comprising at least one
9 outbound message element that is associated with an outbound
10 quality of service treatment value;
11 creating and storing an inbound quality of service value in association
12 with information identifying the bidirectional network data flow;
13 receiving one or more inbound message elements;
14 determining that the inbound message elements are associated with the
15 same bidirectional network data flow; and
16 applying the inbound quality of service value to the inbound message
17 elements based on the stored information.

1 13. (Currently Amended) A switch apparatus as recited in Claim 12, wherein the
2 stored program step of receiving a bidirectional network data flow comprises
3 receiving a bidirectional network data flow comprising at least one outbound
4 message element that is marked with a DSCP value and wherein applying the
5 inbound quality of service value comprises marking the inbound message
6 elements with the DSCP value.

1 14. (Currently Amended) A switch apparatus as recited in Claim 12, wherein the
2 stored program step of receiving a bidirectional network data flow comprises
3 receiving a bidirectional network data flow comprising one or more outbound
4 message elements that are marked with a DSCP value, and wherein applying the

inbound quality of service value comprises retrieving the inbound quality of service value from a mapping of DSCP values to associated quality of service values, and adding the retrieved quality of service value to the inbound message elements.

15. (Currently Amended) A switch apparatus as recited in Claim 11, wherein the creating and storing step comprises creating and storing a hash entry in a hash table that uniquely identifies the bidirectional network data flow and that includes the inbound quality of service value.

16. (Currently Amended) A switch apparatus as recited in Claim 11, wherein receiving a bidirectional network data flow comprises receiving a bidirectional network data flow comprising at least one outbound message element that includes an RSVP PATH message and wherein applying the inbound quality of service value comprises marking the inbound message elements with an RSVP PATH message.

17. (Currently Amended) A computer-readable medium carrying one or more sequences of instructions for automatically applying quality of service treatments to data flows in a communications network, wherein execution of the one or more sequences of instructions by one or more processors causes the one or more processors to perform the steps of:

receiving a bidirectional network data flow comprising at least one outbound message element that is associated with an outbound quality of service treatment value;

creating and storing an inbound quality of service value in association with information identifying the bidirectional network data flow;

receiving one or more inbound message elements;

determining that the inbound message elements are associated with the same bidirectional network data flow; and

14 applying the inbound quality of service value to the inbound message elements
15 based on the stored information.

1 18. (Currently Amended) A data communications network, comprising:
2 a first end station that communicates with other end stations in the network using
3 packetized message elements;
4 a router coupled to the first end station and capable of routing the message
5 elements among the first end station and the other end stations and
6 automatically applying quality of service treatments to the data flows, and
7 comprising a memory configured to store information identifying the data
8 flows and an inbound quality service value associated with each of the
9 data flows, and a stored program that can access the information in the
10 memory and which, when executed by the router apparatus, carries out the
11 steps of:

12 receiving a bidirectional network data flow directed from one of the other
13 end stations to the first end station and comprising at least one
14 outbound message element that is associated with an outbound
15 quality of service treatment value;
16 creating and storing an inbound quality of service value in association
17 with information identifying the bidirectional network data flow;
18 receiving one or more inbound message elements;
19 determining that the inbound message elements are associated with the
20 same bidirectional network data flow; and
21 applying the inbound quality of service value to the inbound message
22 elements based on the stored information.

1 19. (Currently Amended) A method of automatically applying a quality of service
2 treatment to a bidirectional network data flow in a packet-switched
3 communications network, comprising the steps of:

4 creating and storing a hash entry in a hash table of a network device that uniquely
5 identifies an inbound quality of service value in association with
6 information identifying a bidirectional network data flow based on an
7 outbound quality of service value that is in at least one outbound message
8 element that is associated with an outbound quality of service treatment
9 value;

1 receiving one or more inbound message elements;

2 determining that the inbound message elements are associated with the same
3 bidirectional network data flow; and

4 applying the inbound quality of service value to the inbound message elements
5 based on the stored information.

1 20. (Currently Amended) A method as recited in Claim 19, wherein the bidirectional
2 network data flow comprises at least one outbound message element that is
3 marked with a DSCP value and wherein applying the inbound quality of service
4 value comprises marking the inbound message elements with the DSCP value.

1 21. (Currently Amended) A method as recited in Claim 19, wherein the bidirectional
2 network data flow comprises one or more outbound message elements that are
3 marked with a DSCP value, and wherein applying the inbound quality of service
4 value comprises retrieving the inbound quality of service value from a mapping of
5 DSCP values to associated quality of service values, and adding the retrieved
6 quality of service value to the inbound message elements.

7 22. (Currently Amended) A method as recited in Claim 19, wherein the bidirectional
8 network data flow comprises at least one outbound message element that includes
9 an RSVP PATH message and wherein applying the inbound quality of service
10 value comprises marking the inbound message elements with an RSVP PATH
11 message.